GU0020168

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et seq., the "Act),

University of Guam Marine Laboratory, UOG Station
Mangilao, Guam 96923

is authorized to discharge seawater from Outfall No. 001 and Outfall No. 002 of the above named facility located on the island of Guam at:

No. 001
Latitude: 13° 25' 36" N
Longitude: 144° 47' 44" E

No. 002
Latitude: 13° 25' 36" N
Longitude: 144° 47' 44" E

to the Pacific Ocean.

The discharge must be in accordance with effluent limitations, monitoring requirements and other conditions set forth herein, and in the attached EPA Region 9 "Standard Federal NPDES Permit Conditions."

This permit shall become effective on: July 15th 2006. ,

This permit and the authorization to discharge shall expire at midnight, July 14th, 2011.

Signed this *12th* day of *June*, 2006.

For the Regional Administrator

// Signed//

Alexis Strauss, Director
Water Division

NPDES Permit No. GU 0020168

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IV. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

A. Effluent limitations and monitoring requirements are based upon an average flow of 0.00964 m^3/sec (0.216 mgd). The permittee is authorized to discharge from Discharge Outfall Serial No. 001.

1. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Maximum Discharge Limitations Unless Otherwise Noted						Monitoring Requirements	
	Average Monthly (lbs/day)	Average Weekly (lbs/day)	Maximum Daily (lbs/day)	Average Monthly	Average Weekly	Maximum Daily	Monitoring Frequency	Sample Type
Flow (mgd)	n/a[1]	n/a	n/a	[2]	n/a	[2]	Continuous	Continuous
Total Suspended Solids [3, 4]	22.3	n/a	n/a	[2]	n/a	15 (mg/L)	Quarterly[5]	Discrete
pH	Not less than 6.5 units nor greater than 8.5 units						Quarterly	Discrete
Orthophosphate (PO_4-P)	n/a	n/a	[2]	n/a	n/a	[2](mg/L)	Quarterly	24 hour Composite
Nitrate-Nitrogen (NO_3-N)	n/a	n/a	[2]	n/a	n/a	[2](mg/L)	Quarterly	24 hour Composite
Salinity	n/a	n/a	n/a	n/a	n/a	[2](ppt)	Quarterly	Discrete
Temperature	n/a	n/a	n/a	n/a	n/a	[2](^oC)	Quarterly	Discrete

[1] n/a = not applicable.

[2] Monitoring and reporting required. No discharge limitation set at this time.

[3] Discharge limitations is based on Best Professional Judgement and previous NPDES permit

[4] Both the influent (i.e., water supply) and effluent shall be monitored and reported. The discharge limitations (in lbs/day) applies to the mass of total suspended solids discharged, where effluent flow (in mgd) x effluent concentration (in mg/L) x 8.34 = total suspended solids in lbs/day

[5] Quarterly means January-March/April-June/July-September/October-December. Every other quarterly sample shall be collected during cleaning of animal aquaria and noted as such on the Discharge Monitoring Report from.

B. Effluent limitations and monitoring requirements are based upon an average flow of 0.00964 m^3/sec (0.216 mgd). The permittee is authorized to discharge from Discharge Outfall Serial No. 002.

1. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Maximum Discharge Limitations Unless Otherwise Noted						Monitoring Requirements	
	Average Monthly (lbs/day)	Average Weekly (lbs/day)	Maximum Daily (lbs/day)	Average Monthly	Average Weekly	Maximum Daily	Monitoring Frequency	Sample Type
Flow (mgd)	n/a[1]	n/a	n/a	[2]	n/a	[2]	Continuous	Continuous
Total Suspended Solids [3, 4]	22.3	n/a	n/a	[2]	n/a	15 (mg/L)	Quarterly[5]	Discrete
pH [6]	Not less than 6.5 units nor greater than 8.5 units						Quarterly	Discrete
Orthophosphate (PO_4-P)	n/a	n/a	[2]	n/a	n/a	[2](mg/L)	Quarterly	24 hour Composite
Nitrate-Nitrogen (NO_3-N)	n/a	n/a	[2]	n/a	n/a	[2](mg/L)	Quarterly	24 hour Composite
Salinity	n/a	n/a	n/a	n/a	n/a	[2](ppt)	Quarterly	Discrete
Temperature	n/a	n/a	n/a	n/a	n/a	[2](^oC)	Quarterly	Discrete

[1] n/a = not applicable.

[2] Monitoring and reporting required. No discharge limitation set at this time.

[3] Discharge limitations is based on Best Professional Judgement and previous NPDES permit

[4] Both the influent (i.e., water supply) and effluent shall be monitored and reported. The discharge limitations (in lbs/day) applies to the mass of total suspended solids discharged, where effluent flow (in mgd) x effluent concentration (in mg/L) x 8.34 = total suspended solids in lbs/day

[5] Quarterly means January-March/April-June/July-September/October-December. Every other quarterly sample shall be collected during cleaning of animal aquaria and noted as such on the Discharge Monitoring Report from.

[6] Discharge limitation is based on applicable Revised Guam Water Quality Standards

C. All waters shall meet generally accepted aesthetic qualifications, shall be capable of supporting desirable aquatic life, and shall be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land-use practices or other human activities that:

1. cause visible floating materials, debris, oils, grease, scum, foam, or other floating matter which degrades water quality or use;

2. produce visible turbidity, settle to form deposits or otherwise adversely affect aquatic life;

3. produce objectionable color, odor, or taste, directly or by chemical or biological action;

4. injure or are toxic or harmful to humans, animals, plants or aquatic life; and

5. induce the growth of undesirable aquatic life.

D. Concentrations of Oil or Petroleum Products that exceed the following limits are not allowed:

1. detectable as a visible film, or sheen, or results in visible discoloration of the surface of the receiving water with a corresponding oil or petroleum product odor; or

2. causes damage to fish, invertebrates or objectionable degradation of drinking water quality; or

3. forms an oil deposit on the shores or bottom of the receiving body of water.

E. The discharge shall be free from substances in amounts sufficient to produce a detectable off flavor in the flesh of fish caught in the receiving water or produce objectionable odors or visible turbidity in the receiving water.

F. Discharge Prohibitions

1. The discharge of any pollutant in toxic amounts, including substances which may accumulate to toxic amounts during the expected life of organisms in the receiving water, which are lethal to, or which produce deleterious genetic, physiological, or behavioral effects in organisms is strictly prohibited.

2. The discharge of any radioactive wastes and contaminated radioactive materials from research facilities is strictly prohibited.

G. The Discharge shall not cause:

1. The enterococci bacteria concentrations in the receiving water based on 5 sequential samples collected over a 30 day period to exceed a geometric mean of 35 enterococci/100 mL, nor any instantaneous reading from a single sample to exceed 104 enterococci/100 mL.

2. The pH in the receiving waters to vary more than 0.5 units from the ambient pH, except due to natural causes.

3. The orthophosphate (PO_4-P) concentration in the receiving waters to exceed 0.05 mg/L

4. The nitrate-nitrogen (NO_3-N) concentration in the receiving waters to exceed 0.20 mg/L

5. The concentration of dissolved oxygen in the receiving waters to be less than 75% saturation.

6. The salinity of the receiving waters to be altered more than 10% from the ambient condition, except when due to natural conditions.

7. The concentrations of suspended matter in the receiving waters to be increased more than 10% from the ambient condition, or to exceed 20 mg/L except when due to natural conditions.

8. The discharge shall not cause the temperature of the receiving

water to vary by more than 1.8 ˚F (1.0 ˚C) from ambient conditions.

9. The discharge shall not cause turbidity greater than 1.0 NTU (Nephelometric Turbidity Units) over ambient conditions at any time.

H. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations:

1. Influent (i.e., water supply) samples shall be taken immediately prior to introduction to the animal aquaria where representative samples of the influent can be obtained.

2. Effluent samples shall be taken after any in-laboratory return flows and the last treatment process and prior to mixing with the receiving waters, where representative samples of the effluent can be obtained.

II DEFINITIONS

A. The "monthly or weekly average" discharge means the total discharge by weight during a calendar monthly or weekly period, respectively, divided by the number of days in the period that the facility was discharging. Where less than daily sampling is required by this permit, the monthly or weekly average discharge shall be determined by the summation of all the measured discharges by weight divided by the number of days during the monthly or weekly period when the measurements were made.

B. A "discrete" sample means any individual sample collected in less than 15 minutes. A "discrete" sample for enteric virus means any individual sample collected in less than 3 hours.

C. A "composite sample" means, for flow rate measurements, the arithmetic mean of no fewer than 8 individual measurements taken at equal intervals for 8 hours or for the duration of discharge, whichever is shorter. A composite sample means, for other than flow rate measurement, a combination of 8 individual portions obtained at equal time intervals for 8 hour(s) or for the duration of discharge, whichever is shorter. The volume of each individual portion shall be directly proportional to the discharge flow rate at the time of sampling. The sampling period shall coincide with the period of maximum discharge flow.

D. The "daily maximum" discharge means the total discharge by weight during any calendar day.

E. The "monthly or weekly average" concentration, other than for fecal or total coliform bacteria, means the arithmetic mean of measurements made during a calendar monthly or

weekly period, respectively. The "monthly or weekly average" concentration for fecal or total coliform bacteria means the geometric mean of measurements made during a monthly or weekly period, respectively. The geometric mean is the n^{th} root of the product of n numbers.

F. The "daily maximum" concentration means the measurement made on any single discrete sample or composite sample.

III. STANDARD OPERATING PLAN

The permittee shall develop and implement a standard operating plan (SOP) to prevent/minimize the discharge of pollutants from the permitted facility into Pago Bay. The SOP shall include Best Management Practices (BMPs) for the operation and maintenance of the seawater system. The SOP shall also include descriptions of the applications of effluent treatment technologies, management practices regarding the seawater system (including animal aquaria) cleaning procedures, animal feeding practices[1], and a chemical/other deleterious substances management plan. The chemical/other deleterious substances management plan shall include descriptions of handling, storage, disposal, spill/clean-up, and use/application practices to prevent/minimize the discharge of chemical/deleterious substances into Pago Bay. The permittee shall submit this SOP to USEPA Region 9 and GEPA within 180 days of the effective date of this permit.

IV RECEIVING WATER MONITORING CONDITIONS

1. At the direction of USEPA Region 9, the permittee shall submit for USEPA Region 9 approval a water quality, sediment quality, biological resources, and/or human health risk monitoring program; CWA Section 403: Procedural and Monitoring Guidance (EPA 842-B-94-003, 1994) should be consulted in conjunction with monitoring program development.

2. In accordance with 40 CFR 122 and 124, USEPA Region 9 may modify this permit to include appropriate receiving water monitoring requirements to ensure discharge compliance with Section 403(c) of the Act.

3. On a quarterly basis, the permittee shall conduct the following monitoring program

[1] The SOP shall specifically address animal feeding procedures (e.g., feed application, excess feed removal and disposal, etc.) which involve feed containing growth hormones.

in the immediate vicinity of the discharge of aquaria circulation water effluent from the UOG Marine Laboratory seawater system to Pago Bay. This receiving water monitoring program shall include visual observations of biota in the immediate vicinity of the discharge and a description of climatic and receiving water characteristics (e.g., weather observations, floating debris, discolorations, wind speed and direction, time observation and tide height, etc.) at the time biological observations are conducted. A written description of these visual observations shall be submitted as an attachment to the discharge monitoring reports forms (see part E.4 of this permit)

V. RE-OPENER

If monitoring indicates that the discharges cause or contribute, or have reasonable potential to cause, or contribute to excursions above a water quality objectives, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. Also, this permit may be modified, in accordance with the requirements set forth at 40 CFR Parts 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new state water quality standards applicable to effluent toxicity.

VI. MODIFICATION

Monitoring, analytical, and reporting requirements may be modified by the RegionalAdministrator upon due notice.

VII. GENERAL MONITORING AND REPORTING REQUIREMENTS

All influent and effluent monitoring and receiving water monitoring, sample preservation, and analyses shall be performed as described in the most recent edition of 40 CFR 136, Appendix B, unless otherwise specified in this permit. For any priority toxic pollutant effluent analyses, the permittee shall utilize an approved test procedure with a Method Detection Limit (MDL) that is lower than the marine waters acute, chronic, and human health criteria concentrations referenced in *Revised Guam Water Quality Standards*. If the MDL is higher than the criteria concentrations, then the permittee shall use the approved test procedure with the lowest MDL. Effluent analyses for metals shall measure "total recoverable metal", except as provided under 40 CFR 122.45(c)(3).

1. The results of all monitoring required by this permit shall be submitted in such a

format as to allow direct comparison with the limitations and requirements of this permit.

2. The permittee shall submit influent and effluent monitoring results on monthly Discharge Monitoring Report (DMR) forms (EPA No. 3320-1) to USEPA Region 9 and GEPA by the 28th of April, July, October and January for each period covering the previous three calendar months (e.g., January, February, and March monthly DMRs are due by April 28th). Unless otherwise specified, effluent flow shall be reported in terms of the arithmetic mean flow over each monthly period, and the maximum daily flow over that monthly period.

3. For the purposes of reporting, the permittee shall use the reporting threshold equivalent to the laboratory's method detection limit[2] (MDL). As such, the permittee must use a standard calibration of the minimum level[3] (ML). Analytical results at or above the laboratory's MDL shall be reported on the DMR as the measured concentration. For analytical results between the MDL and ML, the permittee shall report in the comment section on the DMR the standard deviaton (S) value (determined by the laboratory during the MDL study) and the number of sample aliquots (n). Analytical results below the laboratory's MDL shall be reported as zero (i.e., "0").

4. Duplicate signed copies of all reports required by this permit shall be submitted to the Regional Adminstrator and GEPA at the following addresses:

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[2] The Method Detection Limit (MDL) is the minimum concentration of an analyte that can be detected with 99% confidence, as defined by a specific laboratory method in 40 CFR 136, Appendix B

[3] The Minimum Level (ML) is the concentration in a sample equivalent to the concentration of the lowest calibration standard analyzed in a specific analytical procedure, assuming that all the method-specific sample weights, volumes, and processing steps have been followed. Where a promulgated ML is not available, an interim ML is calculated by multiplying the MDL by a factor of 3.18 and then rounding this calculated value to the nearest multiple of (1, 2, or 5) x 10^n, where n = 0 or an integer. Alternatively, interim Mls for metals can be rounded to the nearest whole number.

USEPA Region 9
Pacific Islands Office (CMD-5)
75 Hawthorne Street
San Fransicco, CA 94105-3901
Telephone: 415/972-3769

Administrator
Guam Environmental Protection Agency
P.O. Box 22439-GMF
Barrigada, GU 96921
Telephone: 671/475-1658

VIII. USEPA STANDARD PERMIT CONDITIONS

This permit requires the permittee to comply with the attached EPA Region IX *Standard Federal NPDES Permit Conditions*, dated July 1, 2001